

Survey About Threats and Conservation Needs for Fish and Wildlife Habitats in Indiana

Summary of Results – Valleys and Hills (Region 4)

DNR

Indiana Department
of Natural Resources



INDIANA DIVISION OF
FISH & WILDLIFE

PURDUE
UNIVERSITY



FORESTRY
AND
NATURAL
RESOURCES

Section III: Threats to Fish and Wildlife Habitats

11. How would you describe the **overall quality** of fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4)? (Check only one)

	Very Poor		Poor		Satisfactory		Good		Very good		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	%	N	
Aquatic systems	0.0	0	18.8	3	68.8	11	12.5	2	0.0	0	0.0	0	16
Agricultural lands	14.3	2	42.9	6	21.4	3	21.4	3	0.0	0	0.0	0	14
Barren lands	0.0	0	0.0	0	33.3	1	33.3	1	0.0	0	33.3	1	3
Developed Lands	0.0	0	60.0	3	20.0	1	0.0	0	0.0	0	20.0	1	5
Forests	0.0	0	28.6	6	38.1	8	23.8	5	4.8	1	4.8	1	21
Grasslands	11.8	2	47.1	8	23.5	4	5.9	1	5.9	1	5.9	1	17
Subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	5.3	1	31.6	6	36.8	7	21.1	4	0.0	0	5.3	1	19
Total	5.3	5	33.7	32	36.8	35	16.8	16	2.1	2	5.3	5	95

12. How would you describe the total amount and overall quality of fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4) since 2005? (Check one for each line item)

Amount of fish and wildlife habitats within HABITAT since 2005

	Increase		About the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	
Aquatic systems	11.8	2	76.5	13	11.8	2	0.0	0	17
Agricultural lands	7.1	1	7.1	1	78.6	11	7.1	1	14
Barren lands	0.0	0	66.7	2	0.0	0	33.3	1	3
Developed Lands	0.0	0	20.0	1	60.0	3	20.0	1	5
Forests	13.6	3	36.4	8	45.5	10	4.5	1	22
Grasslands	11.8	2	29.4	5	52.9	9	5.9	1	17
Subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	26.3	5	10.5	2	52.6	10	10.5	2	19
Total	13.4	13	33.0	32	46.4	45	7.2	7	97

Quality of fish and wildlife habitats within HABITAT since 2005

	Increase		About the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	
Aquatic systems	0.0	0	70.6	12	29.4	5	0.0	0	17
Agricultural lands	7.1	1	7.1	1	78.6	11	7.1	1	14
Barren lands	0.0	0	66.7	2	0.0	0	33.3	1	3
Developed Lands	0.0	0	0.0	0	80.0	4	20.0	1	5
Forests	13.6	3	45.5	10	31.8	7	9.1	2	22
Grasslands	5.9	1	35.3	6	52.9	9	5.9	1	17
Subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	26.3	5	31.6	6	31.6	6	10.5	2	19
Total	10.3	10	38.1	37	43.3	42	8.2	8	97

13. How would you predict about the total amount and overall quality of fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4) over the next 10 years? (Check one for each line item)

Amount of fish and wildlife habitats within HABITAT over the next 10 years

	Increase	About the same	Decrease	I don't know	Total Responses
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	%	N	%	N	%	N	%	N	
Aquatic systems	17.6	3	52.9	9	29.4	5	0.0	0	17
Agricultural lands	15.4	2	15.4	2	69.2	9	0.0	0	13
Barren lands	33.3	1	0.0	0	33.3	1	33.3	1	3
Developed Lands	20.0	1	0.0	0	80.0	4	0.0	0	5
Forests	14.3	3	23.8	5	57.1	12	4.8	1	21
Grasslands	11.8	2	29.4	5	52.9	9	5.9	1	17
Subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	31.6	6	26.3	5	36.8	7	5.3	1	19
Total	18.9	18	27.4	26	49.5	47	4.2	4	95

Quality of fish and wildlife habitats within HABITAT over the next 10 years

<i>Valleys and Hills (Region 4)</i>	Increase		About the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	
Aquatic systems	5.9	1	70.6	12	23.5	4	0.0	0	17
Agricultural lands	21.4	3	14.3	2	64.3	9	0.0	0	14
Barren lands	0.0	0	33.3	1	33.3	1	33.3	1	3
Developed Lands	0.0	0	20.0	1	80.0	4	0.0	0	5
Forests	4.5	1	36.4	8	54.5	12	4.5	1	22
Grasslands	5.9	1	35.3	6	58.8	10	0.0	0	17
Subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wetlands	15.8	3	52.6	10	26.3	5	5.3	1	19
Total	9.3	9	41.2	40	46.4	45	3.1	3	97

14. **Currently**, to what extent do you think the following general categories of threats **apply** to fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4)? (Check one for each line item)

<i>Valleys and Hills (Region 4)</i>	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Residential and commercial development	39.6	36	29.7	27	25.3	23	4.4	4	1.1	1	91
Agriculture and aquaculture	60.0	54	33.3	30	5.6	5	0.0	0	1.1	1	90
Energy production and mining	30.8	28	37.4	34	25.3	23	5.5	5	1.1	1	91
Transportation and service corridors	20.2	18	20.2	18	50.6	45	5.6	5	3.4	3	89
Biological resource use	8.8	8	11.0	10	42.9	39	31.9	29	5.5	5	91
Human intrusion and disturbance	22.2	20	36.7	33	25.6	23	8.9	8	6.7	6	90
Natural systems modifications	23.1	21	34.1	31	29.7	27	8.8	8	4.4	4	91
Invasives and other problematic species and genes	37.0	34	37.0	34	21.7	20	2.2	2	2.2	2	92
Pollution	27.5	25	31.9	29	29.7	27	7.7	7	3.3	3	91
Climate change and severe weather	15.4	14	15.4	14	28.6	26	28.6	26	12.1	11	91
Other stressors	9.3	8	12.8	11	40.7	35	9.3	8	27.9	24	86

15. You indicated a number of general categories as significant or moderate threats to fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4). Please indicate which of the following are specific threats to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4) and their trends over the next 10 years. You may add additional threats you think are important using the “Other, please specify” option.

Residential and Commercial Development

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?											How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses	
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N		
Housing and urban areas	50.0	31	46.8	29	3.2	2	0.0	0	.0	0	62	75.9	41	20.4	11	0.0	0	3.7	2	54	
Commercial and industrial areas	33.9	20	54.2	32	11.9	7	0.0	0	0.0	0	59	71.2	37	25.0	13	0.0	0	3.8	2	52	
Tourism and recreation areas (e.g., sites with a substantial footprint – golf courses, campgrounds, etc.)	0.0	0	38.7	24	41.9	26	16.1	10	3.2	2	62	25.9	14	59.3	32	0.0	0	14.8	8	54	

Other responses listed:

Response text:	N
Conversion to Ag	1
convert back to ag	1
Development associated with the new i69 corridor	1
industrial waste	1
Total responses:	4

Agriculture and Aquaculture

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?											How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses	
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N		
Annual and perennial nontimber crops	48.2	40	37.3	31	9.6	8	3.6	3	1.2	1	83	65.8	50	28.9	22	1.3	1	3.9	3	76	
Wood and pulp plantations	2.4	2	12.0	10	32.5	27	33.7	28	19.3	16	83	8.1	6	56.8	42	2.7	2	32.4	24	74	
Livestock farming and ranching	8.4	7	38.6	32	41.0	34	7.2	6	4.8	4	83	17.3	13	68.0	51	4.0	3	10.7	8	75	
Aquaculture	1.2	1	4.9	4	18.5	15	44.4	36	30.9	25	81	7.1	5	51.4	36	0.0	0	41.4	29	70	
Conversion of habitat to annual crops	60.2	50	31.3	26	4.8	4	1.2	1	2.4	2	83	78.7	59	16.0	12	0.0	0	5.3	4	75	

Other responses listed:																			
Response text:																			N
DESTRUCTION OF WETLANDS AND STREAMS																			1
DRAINING WETLANDS																			1
Total responses:																			2

Energy Production and Mining

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Oil and gas drilling	23.3	14	36.7	22	33.3	20	1.7	1	5.0	3	60	64.3	36	28.6	16	0.0	0	7.1	4	56
Mining and quarrying	50.8	30	42.4	25	6.8	4	0.0	0	0.0	0	59	64.9	37	22.8	13	8.8	5	3.5	2	57
Renewable energy production	0.0	0	15.0	9	40.0	24	26.7	16	18.3	11	60	25.0	14	46.4	26	0.0	0	28.6	16	56
Fossil fuel energy production	40.0	24	33.3	20	15.0	9	3.3	2	8.3	5	60	46.4	26	39.3	22	3.6	2	10.7	6	56
Shale gas development (e.g., fracking)	23.3	14	25.0	15	16.7	10	15.0	9	20.0	12	60	59.6	34	14.0	8	0.0	0	26.3	15	57

Other responses listed:																			
Response text:																			N
Total responses:																			0

Transportation and Service Corridors

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Roads and railroads	51.4	18	25.7	9	17.1	6	2.9	1	2.9	1	35	63.3	19	33.3	10	0.0	0	3.3	1	30
Utility and service lines	8.6	3	37.1	13	42.9	15	11.4	4	0.0	0	35	33.3	10	60.0	18	3.3	1	3.3	1	30
Flight paths	0.0	0	2.9	1	28.6	10	51.4	18	17.1	6	35	14.8	4	40.7	11	0.0	0	44.4	12	27
Shipping lanes	14.7	5	5.9	2	20.6	7	47.1	16	11.8	4	34	21.4	6	42.9	12	0.0	0	35.7	10	28

Other responses listed:																			
Response text:																			N
Total responses:																			0

Biological Resource Use

<i>Valleys and Hills (Region 4)</i>	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Forestry practices (e.g., silvicultural methods leading to the lack of early successional habitat)	11.8	2	47.1	8	35.3	6	5.9	1	0.0	0	17	46.7	7	46.7	7	0.0	0	6.7	1	15

Other responses listed:

Response text: N

Total responses: 0

Human Intrusion and Disturbance

<i>Valleys and Hills (Region 4)</i>	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Recreation activities (e.g., ATVs, trail use, horseback riding, high-speed boating, canoeing)	11.5	6	32.7	17	50.0	26	3.8	2	1.9	1	52	57.1	28	40.8	20	0.0	0	2.0	1	49

Other responses listed:

Response text: N

Atv use 2

Total responses: 2

Natural Systems Modification

<i>Valleys and Hills (Region 4)</i>	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Dams and water management/use	8.0	4	28.0	14	32.0	16	24.0	12	8.0	4	50	23.4	11	57.4	27	2.1	1	17.0	8	47
Fire and fire suppression	7.8	4	23.5	12	23.5	12	43.1	22	2.0	1	51	13.0	6	73.9	34	0.0	0	13.0	6	46
Log jam removal	4.0	2	14.0	7	36.0	18	34.0	17	12.0	6	50	15.6	7	62.2	28	0.0	0	22.2	10	45
Over-mowing of natural areas	12.2	6	18.4	9	34.7	17	32.7	16	2.0	1	49	13.0	6	60.9	28	13.0	6	13.0	6	46
Conversion of natural	62.0	31	30.0	15	8.0	4	0.0	0	0.0	0	50	73.9	34	23.9	11	0.0	0	2.2	1	46

habitats to other land uses																			
Other responses listed:																			
Response text:																			N
Lack of sustainable timber management																			1
Total responses:																			1

Invasives and Other Problematic Species/Genes

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Invasive/alien species	61.2	41	38.8	26	0.0	0	0.0	0	0.0	0	67	91.8	56	8.2	5	.0	0	0.0	0	61
Problematic native species (e.g. overabundant native deer or algae)	19.1	13	38.2	26	30.9	21	8.8	6	2.9	2	68	41.9	26	48.4	30	1.6	1	8.1	5	62
Plant diseases	10.6	7	27.3	18	24.2	16	22.7	15	15.2	10	66	31.1	19	42.6	26	.0	0	26.2	16	61
Introduced genetic material (such as crop, seed stock, biocontrol, stocked/released species, etc.)	12.1	8	19.7	13	28.8	19	15.2	10	24.2	16	66	29.0	18	41.9	26	0.0	0	29.0	18	62

Other responses listed:

Response text:																			N
Total responses:																			0

Pollution

Valleys and Hills (Region 4)	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Runoff from roads/service corridors	17.0	9	52.8	28	26.4	14	3.8	2	0.0	0	53	46.9	23	49.0	24	0.0	0	4.1	2	49
Chemical spills	17.0	9	35.8	19	39.6	21	3.8	2	3.8	2	53	24.5	12	61.2	30	2.0	1	12.2	6	49
Point source pollution from commercial/industrial sources	30.8	16	40.4	21	26.9	14	.0	0	1.9	1	52	38.8	19	49.0	24	8.2	4	4.1	2	49
Air pollution (e.g., smoke, mercury emissions)	18.9	10	41.5	22	26.4	14	7.5	4	5.7	3	53	30.6	15	49.0	24	12.2	6	8.2	4	49
Household sewage and urban water waste	13.2	7	52.8	28	26.4	14	5.7	3	1.9	1	53	32.7	16	46.9	23	14.3	7	6.1	3	49
Agriculture, residential, and forestry effluents	34.0	18	49.1	26	9.4	5	1.9	1	5.7	3	53	44.9	22	42.9	21	4.1	2	8.2	4	49
Garbage and solid waste	7.5	4	28.3	15	41.5	22	17.0	9	5.7	3	53	28.6	14	59.2	29	0.0	0	12.2	6	49
Excess energy (e.g., noise/light	9.8	5	27.5	14	39.2	20	19.6	10	3.9	2	51	43.5	20	43.5	20	2.2	1	10.9	5	46

pollution, warm water discharge,
etc.)

Other responses listed:

Response text:

N

Total responses:

0

Climate Change and Severe Weather

	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
<i>Valleys and Hills (Region 4)</i>	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Changing frequency, duration, and intensity of drought	63.0	17	22.2	6	14.8	4	0.0	0	0.0	0	27	92.0	23	4.0	1	0.0	0	4.0	1	25
Changing frequency, duration, and intensity of floods	66.7	18	29.6	8	3.7	1	0.0	0	0.0	0	27	88.0	22	8.0	2	0.0	0	4.0	1	25
Shifting and alteration of habitats due to climate change	40.7	11	37.0	10	14.8	4	7.4	2	0.0	0	27	92.0	23	4.0	1	0.0	0	4.0	1	25
Temperature extremes	42.3	11	30.8	8	23.1	6	3.8	1	0.0	0	26	88.0	22	8.0	2	0.0	0	4.0	1	25
Shifting seasons/phenology	60.0	15	8.0	2	24.0	6	4.0	1	4.0	1	25	80.0	20	16.0	4	0.0	0	4.0	1	25

Other responses listed:

Response text:

N

Total responses:

0

Other Stressors

	To what extent is this issue a current threat to fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?										How will the significance of this threat change over the next 10 years?									
<i>Valleys and Hills (Region 4)</i>	Significant threat		Moderate Threat		Minor Threat		Not a threat		I don't know		Total Responses	Increase		Remain the same		Decrease		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N		%	N	%	N	%	N	%	N	
Low genetic diversity (due to reduced population size, species inbreeding, etc.)	33.3	6	44.4	8	16.7	3	0.0	0	5.6	1	18	50.0	7	42.9	6	0.0	0	7.1	1	14
Diseases	35.7	5	50.0	7	14.3	2	0.0	0	0.0	0	14	71.4	10	28.6	4	0.0	0	0.0	0	14

Other responses listed:

Response text:

N

CWD BECAUSE OF CAPTIVE CERVID FARMS

1

Total responses:

1

16. Please use the box below to indicate other **emerging/anticipated** threats over the next 10 years to fish and wildlife habitats within **HABITAT** in the **Valleys and Hills (Region 4)** that have not been previously identified. Please provide **specific examples** of the emerging/anticipated threats that you indicate.

Response text:	N
The growing disconnect between people and natural systems inhibits the ability of the public to make informed decisions related to natural resources. More conservation education is needed to increase the public's knowledge, experiences and skills to result in informed decisions, a commitment and constructive actions for wildlife resources.	4
After completion of strip mining operations, mine lands are reclaimed and serve as grassland habitats beneficial to numerous wildlife species. Often times however, these lands are not maintained as grasslands so through time their value to grassland species diminishes.	1
Construction of I-69 will result in a development boom. / / Other major issues are introduced diseases including emerald ash borer, oak wilt, and white nose syndrome	1
Farming of marginal cropland and poor restoration practices by mining industry.	1
Fragmentation of parcels due to splitting of properties leads to reduced management techniques due to smaller economies of scale - creating openings, invasive control, harvesting. Also expect an increase in number of owners as properties are split and more new owners who are not knowledgeable about land management are less likely to participate in management techniques.	1
Major issues in the region are the expected boom in development associated with I-69 and continued loss of diversity to exotic diseases including emerald ash borers, oak wilt, and white nose syndrome.	1
Poor restoration practices. Thousands of acres of tree plantations does not equate to restored wetlands. Consideration to all successional stages, configurations, hydrology and habitat types should be given to the massive effort of wetland restoration in this region. We need to work on this.	1
Practices used to promote game species that are detrimental to nongame species. Ex: managing for quail by using discing methods. / / Overgrowth of vegetation along abandoned railroad lines.	1
Re-mining previously reclaimed strip mine grasslands will have a significant impact on existing grasslands, especially if the newly reclaimed sites are put into ag production	1
The significant reduction in properly implemented early successional habitat projects has already had dramatic impacts on the game and non-game species that require this habitat in Indiana. Without increased cutting in the appropriate habitats this important cover type will be further reduced in this region and throughout Indiana.	1
THERE IS A NATIONAL TREND TO PRIVATIZE HUNTING AND FISHING ACTIVITIES. IT RANGES FROM CAPTIVE CERVID HIGH FENCE SHOOTING TO HARVESTING LARGE CATFISH AND SENDING THEM TO POND LAKES. MORE AND MORE ACERAGE IS BEING PURCHASED AND TURNED INTO PRIVATE HUNTING AND FISHING AREAS. WE NEED TO BUY MORE PUBLIC LAND AND SEVERELY REGULATE ALL PRIVATIZATION OF OUR RESOURCES	1
There is not much left to lose. There are major opportunities to establish and manage some grasslands associated with the new island at the junction of the Wabash and Ohio rivers, increased natural gas pipelines, and I-69	1
This region will face a development boom related to the expansion of I-69	1
Wetlands are being compromised by invasive plant species such as hybrid cattails and Reed canary grass. Also US Corps of Engineers will not give mine reclamation credit for creating wetlands in this region - which is a huge mistake. Reclaimed areas should be restored to the whole range of representative ecosystems.	1
Total Responses:	17

Section IV: Conservation Actions for Fish and Wildlife Habitats

Directions:

When responding to the questions in this section, please think about conservation actions for fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4).

17. Please indicate (1) the importance of the following general categories of conservation actions for fish and wildlife habitats within **HABITAT** in the Valleys and Hills (Region 4) over the next 10 years, and (2) considering your responsibility within your agency/organization, whether you have taken a general category of conservation actions for fish and wildlife habitats within **HABITAT** in the **Valleys and Hills (Region 4)** since 2005 or have plans to do so.

	To what extent do you think this category of conservation action is important for fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4) over the next 10 years?										Have you taken (since 2005) or do you currently plan to take conservation actions in this category for fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4)?							
<i>Valleys and Hills (Region 4)</i>	Very Important		Moderately Important		Somewhat Important		Not Important		I don't know		Total	Yes		No		I don't know		
	%	N	%	N	%	N	%	N	%	N	Responses	%	N	%	N	%	N	Total Responses
Land/water protection	58.4	52	25.8	23	11.2	10	1.1	1	3.4	3	89	61.2	41	26.9	18	11.9	8	67
Land/water/species management	57.3	51	29.2	26	7.9	7	0.0	0	5.6	5	89	67.2	45	16.4	11	16.4	11	67
Education and awareness	46.2	43	26.9	25	21.5	20	0.0	0	5.4	5	93	67.2	45	23.9	16	9.0	6	67
Law and policy	30.3	27	32.6	29	24.7	22	4.5	4	7.9	7	89	37.3	25	37.3	25	25.4	17	67
Livelihood, economic, and other incentives	24.7	22	42.7	38	22.5	20	3.4	3	6.7	6	89	14.9	10	58.2	39	26.9	18	67
External capacity building	18.4	16	43.7	38	26.4	23	4.6	4	6.9	6	87	25.4	16	49.2	31	25.4	16	63

18. You indicated that in your opinion conservation actions relating to the following general categories would be very or moderately important for fish and wildlife habitats within **HABITAT** in the **Valleys and Hills (Region 4)** over the next 10 years. Please indicate the importance of the following specific conservation actions within these general categories for fish and wildlife habitats within HABITAT in the Valleys and Hills (Region 4). You may add additional conservation actions you think are important using the “Other, please specify” option. (Check one for each line item)

Land/Water Protection

<i>Valleys and Hills (Region 4)</i>	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Acquire currently unprotected aquatic systems (manage and/or educate for easement habitat values)	66.7	10	33.3	5	0.0	0	0.0	0	0.0	0	15
Acquire currently unprotected barren lands	50.0	1	0.0	0	50.0	1	0.0	0	0.0	0	2
Acquire currently unprotected forests	33.3	5	53.3	8	13.3	2	0.0	0	0.0	0	15
Acquire currently unprotected grasslands	73.3	11	20.0	3	6.7	1	0.0	0	0.0	0	15
Acquire currently unprotected wetlands	86.7	13	13.3	2	0.0	0	0.0	0	0.0	0	15
Acquire currently unprotected subterranean habitats	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
Preserve currently existing corridors	65.3	49	32.0	24	2.7	2	0.0	0	.0	0	75
Acquire conservation easements to protect important wildlife habitats	61.3	46	34.7	26	4.0	3	0.0	0	0.0	0	75
Reduce conversion to cropland	73.3	55	20.0	15	5.3	4	0.0	0	1.3	1	75
Build/strengthen CRP partnerships	52.0	39	33.3	25	8.0	6	0.0	0	6.7	5	75

Other responses listed:

Response text:

N

STRONGER WETLANDS AND WATERSHED PROTECTION/REGULATION

1

Total responses:

1

Land/Water/Species Management

<i>Valleys and Hills (Region 4)</i>	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Control invasive species in agricultural lands	33.3	4	16.7	2	41.7	5	8.3	1	0.0	0	12
Control invasive species in aquatic systems (e.g., Asian carp, zebra mussels, invasive aquatic plants)	61.5	8	30.8	4	0.0	0	7.7	1	0.0	0	13
Control invasive species in barren lands	50.0	1	0.0	0	50.0	1	0.0	0	0.0	0	2
Control invasive species in developed lands	0.0	0	100.0	3	0.0	0	0.0	0	0.0	0	3
Control invasive species in forests	68.8	11	12.5	2	18.8	3	0.0	0	0.0	0	16
Control invasive species in grasslands	50.0	7	14.3	2	28.6	4	7.1	1	0.0	0	14
Control invasive species in wetlands	56.3	9	25.0	4	18.8	3	0.0	0	0.0	0	16
Control invasive species in subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Control problematic species (e.g., deer, raccoon, geese, domestic cat, feral hog) in agricultural lands	25.0	3	33.3	4	33.3	4	8.3	1	0.0	0	12
Control problematic native species in aquatic systems	23.1	3	15.4	2	53.8	7	7.7	1	0.0	0	13
Control problematic species (e.g., deer, raccoon, skunk, coyote, domestic cat, feral hog) in barren lands	0.0	0	50.0	1	50.0	1	0.0	0	0.0	0	2
Control problematic species (e.g., deer, raccoon, geese, domestic cat, feral hog, exotic/aggressive vegetation) in developed lands	33.3	1	33.3	1	0.0	0	33.3	1	0.0	0	3
Control problematic species (e.g., deer, raccoon, domestic cat, feral hog) in forests	43.8	7	18.8	3	31.3	5	0.0	0	6.3	1	16
Control problematic species (e.g., raccoon, skunk, coyote, domestic cat) in grasslands	21.4	3	7.1	1	35.7	5	28.6	4	7.1	1	14
Control problematic species (e.g., deer, raccoon, domestic cat, feral hog, exotic/aggressive vegetation) in wetlands	12.5	2	43.8	7	31.3	5	12.5	2	0.0	0	16
Control problematic native species in subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dam removal	3.7	1	33.3	9	44.4	12	18.5	5	0.0	0	27
Decrease E. coli counts	10.7	3	39.3	11	42.9	12	3.6	1	3.6	1	28
Decrease number of combined sewer overflow events	20.7	6	51.7	15	24.1	7	0.0	0	3.4	1	29
Develop and promote farming technologies and practices that have conservation benefits (e.g., cover crops, no till)	58.4	45	27.3	21	13.0	10	1.3	1	0.0	0	77
Ex situ conservation (protection of a species outside of its natural habitat). Please specify:	5.4	4	4.1	3	21.6	16	31.1	23	37.8	28	74
Improve drainage management	28.4	21	32.4	24	25.7	19	10.8	8	2.7	2	74
Improve integrated pest management	16.7	2	41.7	5	41.7	5	0.0	0	0.0	0	12
Increase acres of riparian buffers	48.6	35	36.1	26	12.5	9	2.8	2	0.0	0	72
Increase acres enrolled in the Classified Forest and Wildlands Program	36.4	28	41.6	32	14.3	11	5.2	4	2.6	2	77
Link existing habitat blocks through corridor enhancement in agricultural lands	58.3	7	41.7	5	0.0	0	0.0	0	0.0	0	12
Link existing habitat blocks through corridor enhancement in aquatic systems	46.2	6	53.8	7	0.0	0	0.0	0	0.0	0	13
Link existing habitat blocks through corridor enhancement in barren lands	0.0	0	100.0	2	0.0	0	0.0	0	0.0	0	2
Link existing habitat blocks through corridor enhancement in developed lands	66.7	2	0.0	0	33.3	1	0.0	0	0.0	0	3
Link existing habitat blocks through corridor enhancement in forests	68.8	11	12.5	2	18.8	3	0.0	0	0.0	0	16
Link existing habitat blocks through corridor enhancement in grasslands	46.7	7	40.0	6	13.3	2	0.0	0	0.0	0	15
Link existing habitat blocks through corridor enhancement in wetlands	50.0	8	50.0	8	0.0	0	0.0	0	0.0	0	16
Enhance corridors in subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manage biofuel grasslands	3.7	1	29.6	8	37.0	10	3.7	1	25.9	7	27
Manage urban woodlots	33.3	1	33.3	1	0.0	0	33.3	1	0.0	0	3
Mine reclamation	52.4	33	31.7	20	12.7	8	1.6	1	1.6	1	63
Promote diversity of forest types and successional stages	66.7	10	26.7	4	6.7	1	0.0	0	0.0	0	15
Promote diversity of grassland types and successional stages	66.7	10	26.7	4	6.7	1	0.0	0	0.0	0	15
Promote diversity of wetland types and successional stages	68.8	11	31.3	5	0.0	0	0.0	0	0.0	0	16
Protect and enhance undeveloped shorelines	31.0	9	37.9	11	17.2	5	10.3	3	3.4	1	29
Protect natural water regimes (e.g., withdraws, warm-water discharge)	31.0	9	48.3	14	20.7	6	0.0	0	0.0	0	29
Protect adjacent buffer zones	43.3	13	40.0	12	16.7	5	0.0	0	0.0	0	30
Reduce losses of fish and wildlife habitats (due to agriculture, urban sprawl,	72.7	56	19.5	15	6.5	5	1.3	1	0.0	0	77

commercial development, etc.)											
Reduce nutrient and toxin loads (e.g., heavy metals, pharmaceuticals, fertilizers, insecticides)	40.8	31	27.6	21	26.3	20	5.3	4	0.0	0	76
Reduce recreational overuse of aquatic systems	0.0	0	46.2	6	30.8	4	23.1	3	0.0	0	13
Reduce recreational overuse of forests	12.5	2	12.5	2	68.8	11	6.3	1	0.0	0	16
Reduce recreational overuse of grasslands	13.3	2	6.7	1	40.0	6	33.3	5	6.7	1	15
Reduce recreational overuse of wetlands	6.3	1	25.0	4	56.3	9	12.5	2	0.0	0	16
Reduce recreational overuse of subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Reduce stream bank erosion	46.2	6	53.8	7	0.0	0	0.0	0	0.0	0	13
Reduce stream head cutting	30.8	4	46.2	6	15.4	2	0.0	0	7.7	1	13
Reestablish natural disturbance regimes in barren lands	100.0	1	0.0	0	0.0	0	0.0	0	0.0	0	1
Reestablish natural disturbance regimes in forests	60.0	9	26.7	4	13.3	2	0.0	0	0.0	0	15
Reestablish natural disturbance regimes in grasslands	66.7	10	20.0	3	6.7	1	0.0	0	6.7	1	15
Reestablish natural disturbance regimes in wetlands	43.8	7	18.8	3	37.5	6	0.0	0	0.0	0	16
Reestablish natural disturbance regimes in subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Remove log jams	0.0	0	23.1	3	53.8	7	23.1	3	0.0	0	13
Restore and integrate diversity of habitats into crop-production dominated landscapes	50.0	6	41.7	5	8.3	1	0.0	0	0.0	0	12
Restore and integrate diversity of habitats into developed landscapes	0.0	0	66.7	2	33.3	1	0.0	0	0.0	0	3
Restore habitats and natural systems in aquatic systems	53.8	7	30.8	4	15.4	2	0.0	0	0.0	0	13
Restore habitats and natural systems in barren lands	50.0	1	50.0	1	0.0	0	0.0	0	0.0	0	2
Restore habitats and natural systems in forests	62.5	10	37.5	6	0.0	0	0.0	0	0.0	0	16
Restore habitats and natural systems in grasslands	80.0	12	20.0	3	0.0	0	0.0	0	0.0	0	15
Restore habitats and natural systems in wetlands	75.0	12	25.0	4	0.0	0	0.0	0	0.0	0	16
Restore habitats and natural systems in subterranean systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Species reintroduction. Please specify:	21.4	6	17.9	5	28.6	8	7.1	2	25.0	7	28

Ex situ conservation

Response text	N
Develop insurance populations using zoos and botanic gardens	1
PHESANTS AND SALMON ARE NOT NATIVE BUT BENIFICAL	1
STOP CAPTIVE SERVIDS	1
Total responses:	3

Species reintroduction listed by respondents:

Response text:	N
black bears	2
Crawfish frogs	3
forb diversity	1
Greater Prairie Chicken	1
GROUSE, PRARIE CHICKEN	1

Mud snakes	1
mussels	1
natives	1
QUAIL, GROUSE,PHESANT	1
We need to get native species back on these landscapes	1
Total Responses:	13

Other responses listed:

Response text:	N
American chestnut	2
Elk	2
Total Responses:	4

Education and Awareness

<i>Valleys and Hills (Region 4)</i>	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Educational programs in general	55.2	37	35.8	24	9.0	6	0.0	0	.0	0	67
Educational programs specifically for K-12	60.3	41	32.4	22	7.4	5	0.0	0	0.0	0	68
Improvement of signage and other communication materials in conservation areas	17.9	12	35.8	24	46.3	31	0.0	0	0.0	0	67
Training programs for stakeholders	36.8	25	54.4	37	8.8	6	0.0	0	0.0	0	68

Other responses listed:

Response text:	N
Total responses:	0

Law and Policy

<i>Valleys and Hills (Region 4)</i>	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Increase regulations on invasive species	34.5	19	36.4	20	27.3	15	1.8	1	0.0	0	55
Change current laws, policies, and regulations. Please specify:	25.0	13	11.5	6	30.8	16	1.9	1	30.8	16	52
Set private sector standards and codes	23.6	13	27.3	15	34.5	19	0.0	0	14.5	8	55
Improve compliance with and enforcement of current policies	51.8	29	28.6	16	12.5	7	1.8	1	5.4	3	56
Reduce urban sprawl through planning and zoning	44.6	25	25.0	14	23.2	13	3.6	2	3.6	2	56
Establish legal lake levels	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
Establish rules and guidelines for piers and other structures	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
Increase compliance of existing rules and regulations for aquatic systems	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
Establish submergent vegetation control guidelines	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0

Change current laws, policites, and regulations responses:

Response text	N
enforcement	3
funding for purchase of land, no land clearing	1
gas, oil, coal, fracking	1
give environmental protection laws some teeth	1
Give state endangered species act some teeth	1
increase funding for land acquisition	1
oil and gas laws	1
Require appropriate grasslands be maintained when rights if way are constructed or maintained.	1
STRENGTHEN WETLANDS AND WATERSHED PROTECTION.	1
STRIP MINING IS THREATENING OUR WETLANDS AND STREAMS RECENT PERMITS BY IDEM AND IDNR DIV. OF RECLAMATION ALLOW TOXIC WASTES TO BE BURIED IN PITS AND COVERED WITH WATER NEAR MANY STREAMS AND WETLANDS. THERE IS NO RECOVERY PLAN FOR A BREACH THROUGH SUBSIDANCE, SIESMIC EVENT OR MAN MADE BREECH OF POISENED PONDS.	1
WETLAND AND WATERSHED PROTECTION	1
Total responses	1
	3
Other responses listed:	
Response text	N
Total responses:	0

Livelihood, Economic, and Other Incentives

Valleys and Hills (Region 4)

	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Link natural resources to livelihoods through nature tourism	8.3	5	45.0	27	40.0	24	5.0	3	1.7	1	60
Support substitution of alternatives for environmentally harmful products and processes	23.7	14	37.3	22	33.9	20	3.4	2	1.7	1	59
Promote market forces (e.g., creation of a nitrogen trading market, promotion of alternative agricultural markets) as a tool for conservation	33.3	20	30.0	18	20.0	12	5.0	3	11.7	7	60
Promote conservation payment programs (e.g., payment for ecosystem services, conservation easements)	48.3	29	43.3	26	8.3	5	0.0	0	0.0	0	60
Promote nonmonetary values of natural systems within the state	33.3	20	36.7	22	25.0	15	3.3	2	1.7	1	60
Manage recreational opportunities to be compatible with fish and wildlife habitats	38.3	23	36.7	22	18.3	11	6.7	4	0.0	0	60

Other responses listed:

Response text	N
mitigation land banks	1
Total responses:	1

External Capacity Building

<i>Valleys and Hills (Region 4)</i>	Very important		Moderately important		Somewhat important		Not important		I don't know		Total Responses
	%	N	%	N	%	N	%	N	%	N	
Develop institutions and civil society	17.0	9	30.2	16	26.4	14	3.8	2	22.6	12	53
Develop alliances and partnerships (e.g., between producers, landowners, and conservation professionals)	61.1	33	38.9	21	0.0	0	0.0	0	0.0	0	54
Strengthen conservation financing	57.4	31	31.5	17	9.3	5	0.0	0	1.9	1	54
Increase state's capacity for research and monitoring of conservation actions	37.0	20	51.9	28	11.1	6	0.0	0	0.0	0	54
Promote green infrastructure	44.4	24	33.3	18	11.1	6	9.3	5	1.9	1	54
Promote use of research and science in conservation decision-making processes	57.4	31	38.9	21	3.7	2	0.0	0	0.0	0	54

Other responses listed:

Response text	N
Total responses:	0